

**Further Studies on the Internal Anatomy of the
Meloidae (Coleoptera).**

**II. The Digestive and Reproductive Systems of the S. A.
Blister Beetle, *Picnoseus nitidipennis* Fairmaire and Germain¹
(Coleoptera: Meloidae)**

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Abstract: The digestive and reproductive systems of the South American blister beetle, *Picnoseus nitidipennis*, Fairmaire and Germain has been described, and on the basis of some of the internal anatomical features, this genus has been tentatively placed in the tribe Lyttini.

This paper is a continuation of the study of internal anatomy of blister beetles of the world. In two earlier works (Gupta, 1965, 1966), digestive and reproductive systems of several species of blister beetles have been described and discussed. *P. nitidipennis*, described in this paper, was made available to the author through the courtesy of Mr. L. E. Pena, Santiago, Chile, and was determined by Dr. Antonio Martinez, Buenos Aires, Argentina.

MATERIALS AND METHODS

For details on the techniques, etc., the reader is referred to the earlier work (Gupta, 1965). It must be restated, however, that the descriptions in the present paper in general serve to supplement diagrams and point out important features. In the description of the digestive systems terms "external" and "internal" have been used for convenience of description. The drawing of the stomodaeal intima is slightly diagrammatic and should not be considered bilaterally symmetrical. In the drawings of the reproductive systems, only the organs of one side have been shown. In the drawing of the male reproductive system, the second pair of accessory glands has been stippled to distinguish it from the others, and the extent and the nature of the convolutions of the third pair are not indicated.

DESCRIPTIONS

Digestive System: EXTERNAL (Fig. 1): Esophagus much broadened posteriorly; ventriculus with anterior half lightly wrinkled transversely, remainder rather smooth; lobes of pyloric valve visible externally; six malpighian tubules

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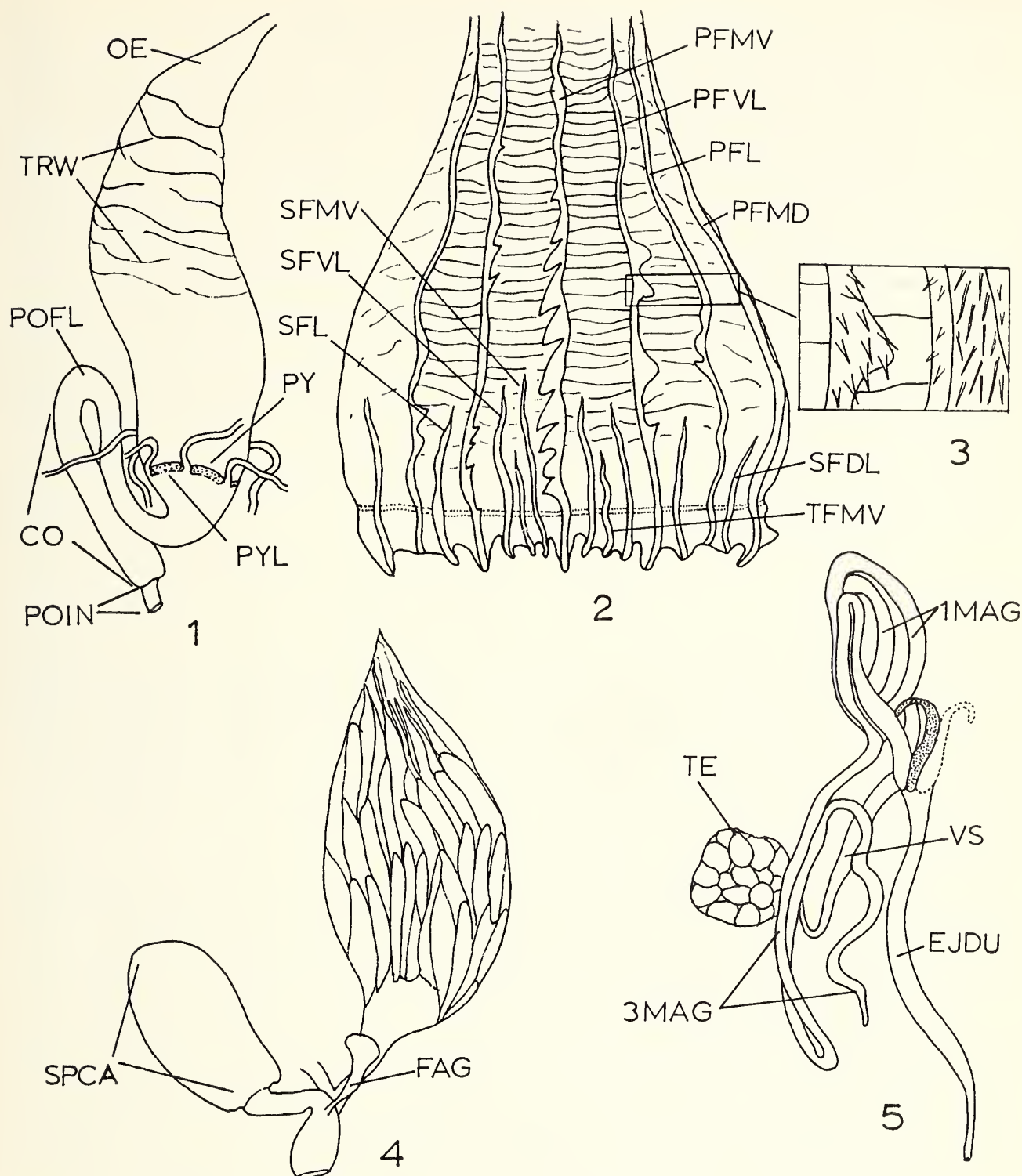


FIG. 1. Lateral view of alimentary canal; 2. Internal view of stomodaeum; 3. Portion of stomodaeal intima magnified; 4. Female reproductive system, dorsal view; 5. Male reproductive system, ventral view.

arising separately, their posterior attachment at inner bend of posterior flexure.

INTERNAL (Figs. 2 and 3): Stomodaeal intima with six primary, eight secondary, and two tertiary folds, median ventral and ventrolateral primary folds with serrate margins, transverse corrugations irregular and indistinct beyond two lateral primary folds and also in region anterior to proventriculus; serrate margins of primary folds with dense, stout spines, remainder of primary folds

and secondary and tertiary folds with long, dense spines, remainder of stomodaeal intima very rarely with minute spines; proventricular region without any distinct pattern. Stomodaeal valve with three well-developed conical primary lobes and three less-developed conical primary and eight secondary lobes, and two poorly developed tertiary lobes.

Reproductive System: FEMALE (Fig. 4): Spermathecal capsule elongate with slight basal swelling, broader and rounded distally, spermathecal duct short, accessory gland vesicular, slightly bent apically and with a short duct. MALE (Fig. 5): Testes small, spherical, vas deferens narrow near testis, vesicula seminalis rather narrow; first pair of accessory glands ovally or spherically coiled, tips of two glands in contact, second pair recurved, recurved portion shorter than basal portion, third pair largest and lightly convoluted; ejaculatory duct slightly broader beyond middle and strongly bowed.

Material Examined: Three specimens (in 10% formaldehyde), Atacama Desert, Chile, IX-22-63 (L. E. Pena).

SYSTEMATIC CONSIDERATIONS

Kaszab (1959) included *Picnoseus* in the tribe Lyttini on the basis of its wing venation. Earlier, Denier (1935) grouped *Picnoseus* with *Lytta* and Borchmann (1907) considered this genus as a subgenus of *Tetraonyx*, and included it in the tribe Lyttini. The writer (Gupta, 1965) characterized the tribe Lyttini by such internal anatomical features as a rather poorly developed stomodaeal valve, absence of V-shaped folds, and the presence of well-developed spermathecal diverticulum. Of these three characters the last one was considered to be an important tribal character. On the basis of this character, and by the presence of such features as a slight basal swelling in the spermathecal capsule and a ventrally recurved second pair of male accessory glands, inclusion of *Picnoseus* in the tribe Lyttini seems to be uncertain although it will be retained in this tribe tentatively. In the earlier work (Gupta, 1965) a basal swelling in the spermathecal capsule and a recurved second pair of male accessory glands were considered to be the tribal features of the Epicautini. However, the absence of V-shaped folds in *Picnoseus* precludes its inclusion in the Epicautini. Borchmann's (1907) consideration of *Picnoseus* as a subgenus of *Tetraonyx* is not supported by the internal anatomical features, inasmuch as *Picnoseus* lacks such tribal characters of Tetraonychini as four V-shaped folds, tubular spermathecal diverticulum, a tubular female accessory gland, and an enlarged vas deferens near testes. It seems to the author that the tribe Lyttini perhaps includes some representatives which have secondarily lost the spermathecal diverticulum (*Cabalia* and *Sybaris*). As more genera belonging to this tribe would be available for study, it would perhaps be necessary to establish two or more subtribes according to the presence or absence of spermathecal diverticulum and other features.

ABBREVIATIONS USED IN FIGURES

CO—colon
EJDU—ejaculatory duct
FAG—female accessory gland
1MAG—first pair of male accessory glands
3MAG—third pair of male accessory glands
OE—esophagus
PFL—lateral primary fold
PFMD—median dorsal primary fold
PFMV—median ventral primary fold
PFVL—ventrolateral primary fold
POFL—posterior flexure
POIN—posterior intestine or rectum
PY—pylorus
PYL—lobes of pyloric valve
SFDL—dorsolateral secondary fold
SFL—lateral secondary fold
SFMV—median ventral secondary fold
SFVL—ventrolateral secondary fold
SPCA—spermathecal capsule
TE—testis
TFMV—median ventral tertiary fold
TRCP—transverse corrugated pattern
TRW—transverse wrinkles
VS—vesicula seminalis

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